

nicotinamide, nicotinic acid, riboflavin, thiamin, vitamin B₆, and vitamin B₁₂.

[Please add new claim 19 to read as follows:]

19. (new) The method of claim 12, wherein at least one of said pyruvate, said adenine or said inositol supplements said cell culture medium at concentrations eliciting approximately a maximal response.

REMARKS

Status of the claims

Claims 12 and 16-17 are pending. Claims 12 and 16-17 are amended. New claims 18-19 are added. No new matter is added.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendments. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**". No new matter has been added.

Amendments to the claims

Claim 12 is amended to recite the components of the NAC medium identified in the claim and which correspond to canceled claim 7. Claims 16-17 are amended to properly depend from claim

12. New claims 18-19 dependent from amended claim 12 and further limit the vitamins and concentrations of the pyruvate, the adenine or the inositol supplements optionally, added to the NAC medium. Therefore, no new matter is contained in the amended and new claims.

This Response to Examiner's Communication is intended to complete the Response to the Restriction Requirement filed July 15, 2002. If any issues regarding the instant claim amendments remain outstanding, the Examiner is respectfully requested to telephone the undersigned attorney of record. Applicants believe that no fees are due, however, should this be in error, please debit Deposit Account No. 07-1185 on which the undersigned is allowed to draw.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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IN THE CLAIMS:

Please amend claim 12 as follows:

12. (twice-amended) A method of determining if an individual of interest has a cysteine deficiency, comprising the steps of:

1) isolating lymphocytes from said individual of interest and from more than one control individual;

2) providing the an N-acetyl-L-cysteine cell culture medium of claim 7 (NAC medium) comprising:

a buffered, serum-free solution having a pH value from about 6.8 to about 7.6, said solution containing:

a biologically utilizable form of pantothenic acid or choline;

at least one inorganic ion in a biologically utilizable form, wherein said ion is chloride ion, phosphate ion, calcium ion, magnesium ion, potassium ion, sodium ion, or iron ion;

cumene hydroperoxide, wherein said cumene hydroperoxide is present in a concentration of about 5 μ M to about 500 μ M;

deionized water,

N-acetyl-L-cysteine (NAC);

a mitogen wherein said mitogen stimulates said lymphocytes to grow; and

optionally, at least one of a supplemental nutrient in a biological utilizable form wherein said supplemental nutrient is:

- a) an L-amino acid;
- b) a vitamin; or
- c) at least one of pyruvate, adenine or inositol;

3) removing NAC from said cell culture medium thereby providing a NAC negative medium;

4) placing no more than half of said lymphocytes isolated from said individual of interest into NAC medium and into NAC negative medium;

5) placing no more than half of said lymphocytes isolated from said at least one control individual into NAC medium and into NAC negative medium, said media other than the media used in step 4);

6) determining growth responses of all of said lymphocytes in steps 4) and 5), said growth response measured by ^3H -thymidine incorporation of said lymphocytes;

7) expressing said growth response of said lymphocytes from said individual of interest as the ratio of lymphocyte growth in NAC medium to lymphocyte growth in NAC negative medium;

8) expressing said growth response of said lymphocytes from said control individuals as an average ratio of lymphocyte growth in NAC medium to lymphocyte growth in NAC negative medium; and

9) comparing said lymphocyte growth response from said individual of interest to the average growth response of said control individuals, wherein if the ratio of said lymphocyte growth response from said individual of interest to said average control is greater than or equal to about 127%, said individual of interest has a glutathione deficiency.

Please add claim 16 as follows:

16. (amended) The ~~cell culture medium method~~ of claim 12 7, wherein said *N*-acetyl-L-cysteine is present in a concentration of about 150 mM.

Please amend claim 17 as follows:

17. (amended) The ~~cell culture medium method~~ of
claim 12 7, wherein said L-amino acid is selected from the group
consisting of L-arginine, L-cysteine, L-glutamine, glycine, L-histidine,
L-isoleucine, L-leucine, L-lysine, L-methionine, L-phenylalanine, L-
serine, L-threonine, L-tryptophan, L-tyrosine, and L-valine.